

Measuring Circumference of the Earth using Simple Physics

About 3000 years old experiment

New Delhi: December 23 2015: A flagship project of SPACE, '**Project Paridhi, a project to measure circumference of earth**' has been conducted in more than 100 schools with over 2,000 students all over India, to celebrate Winter Solstice on December 22, 2015 at their premises. The programme was conducted by Student Earth Scientists, who are specially trained by SPACE to conduct Project Paridhi and measure the circumference of the.

Initially, the 3 trainings were conducted by SPACE to train more than 250 registered students from different schools at Modern Delhi Public School, Faridabad; Delhi Public School, Sector-19, Faridabad and The Indian Heights Schools, Dwarka. In the training, Mr CB Devgun, President-SPACE Foundation and Dr Mila Mitra, Scientific Officer-SPACE has explained and trained the students. In which the the students have taught with presentation and hands-on learning of the experiment. The trained students then underwent a preliminary exam to be SPACE Student Earth Scientist and then each student has conducted the programme at their premises with their school students.

The few of the 100 schools who have participated in the training and conduction of the programme are Modern Delhi Public School, Faridabad; Delhi Public School, Sector-19, Faridabad; The Indian Heights Schools, Dwarka; Indraprastha International School, Dwarka; St. Thomas School, Dwarka; DL DAV Model School, Shalimar Bagh; The Heritage School, Vasant Kunj; Sachdeva Global School; Bal Bharati Public School, Noida; Delhi Public School, Greater Faridabad; Apeejay School, Faridabad; Kulachi Hansraj Model School, Ashok Vihar; Amity International School, Mayur Vihar; Nation Victor Public School, Patparganj; Presidium School, Sec-57, Gurgaon; Shraddha Children's Academy, Chennai; etc.

School has conducted the programme under the guidance of SPACE for Project Paridhi has the following key highlights:

- 1- Project Paridhi, a flagship programme of SPACE has been accredited in a panel discussion on '**Astronomy along Highways and Public Places**' held at Nehru Planetarium, New Delhi in February 2013, by **French Professors, Prof. Denis Savoie and Prof. Bonnet Bidaud.**
- 2- This programme is providing the opportunity to your students to become, **Student Earth Scientists**, who are trained by SPACE to conduct the programme at their school for a mass number of students.
- 3- Project Paridhi promotes **hands on learning of Science** to measure circumference of the Earth.
- 4- The project replicates the same experiment as done by **Greek Astronomer Eratosthenes about 3000 years ago** with simple backyard tools.

Mr CB Devgun, President SPACE, said that, "SPACE has been conducting this program from the past 3 years in India and everyone should do this experiment at least once in their lifetime, this project is a showcase for proving that science can be best learnt by doing. "Project Paridhi" is one of the best examples of hands on science activity as one can calculate the circumference of earth by using simple backyard tools. Up till more than 20,000 SPACE school students have measured the circumference of earth successfully."

By participating in the programme, the school has become a Center for activities in Astronomy. The students not only learnt the science behind Solstice and Paridhi, but also other such as programme

SPACE INDIA

Head Office: WZ-19, Asalatpur, A-3 Block, Janak Puri, New Delhi -110058

Ph.: +91-11-25522193, **Fax:** +91-11-25532193

Email: getintouch@space-india.com **Website:** www.space-india.com

organization, conduction and presentation, communication, leadership and team work. SPACE believes that all of these qualities are important for the holistic development of a child, and would prepare the students for taking up challenging roles in the current competitive world. The goal is to train students as Student Earth Scientists, who will eventually be Science Communicators and Educators who can lead such activities in their school and society to promote Science.

About Project Paridhi:

Project Paridhi was initiated by SPACE 5 years ago. Under this project the students find out the circumference of the Earth by taking measurements of the shadows made by sun in a day to calculate the size of earth and its shape as done about 3000 years ago by a Greek Astronomer Eratosthenes, who was able to measure it within 2% of the present accepted value. Project Paridhi can be done on any day of the year, but on days of equinox and solstices the sun's position is optimized for calculations. Gnomons of all sizes and shapes have been used, including pepsi bottles and cricket wickets to huge gnomons such as Samrat and Ram Yantra at Jantar Mantar and sundial at Barapullah. ***This project has also been accredited in a report on Astronomy in public places and highways by French Professors, Mr. Prof Denis Savoie and Prof Bonnet Bidaud.***

SPACE has been conducting this project previously at various national heritages like Jantar Mantar, Qutub Minar and also by using the giant sundial constructed at Barapullah during the commonwealth games. In this experiment students have been able to calculate the circumference of earth to an accuracy of 99% with comparison to the real circumference. With the help of this project SPACE has highlighted that such Indian monuments can be used as tools to demonstrate and get the common man interested in science.

About SPACE

SPACE came into existence in 2001, with the goal of popularizing science and inculcating scientific temperament among masses specially students in India. Its aims and objectives are derived from the Constitution of India – Part IV-A Fundamental Duties of Citizen, Article 51 A (h), says – “It shall be the duty of every citizen of India - to develop the scientific temper, humanism and the spirit of inquiry and reform”. SPACE has been changing the face of Science and Astronomy awareness, education and innovation in India through path-breaking concepts, services and programs. We are constantly striving to use these programs to foster scientific temperament in society, especially among the youth who are the harbingers of our future. The ultimate intention is to create an intelligent, analytic and space savvy global community who will be the future leaders in mains exploration of space and the universe, in a world that is rapidly heading to a space age. SPACE is also a part of the advisory panel for the restoration of our national heritage and scientific observatory Jantar Mantar.

Our Flagship Projects

- Project Paridhi
- All India Asteroid Search Campaign- AIASC
- ISS Earth KAM (Earth Knowledge Acquired by Middle school students)
- Project Dark Skies
- Kalpna Chawla Quiz Contest
- Internet Telescope
- Project Khoj
- Heliodysey
- Hydro Rocketry Design Competition

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